

INTERNATIONAL SEARCH REPORT

International Application No

PO/US2004/020516

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/11 C12P19/34 C07H21/02 C07H21/04 A01N43/04
A61K31/713

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, EMBASE, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| Y | WO 95/09236 A (GEN HOSPITAL CORP ; HYBRIDON INC (US)) 6 April 1995 (1995-04-06) page 6, lines 11-14 claim 7; example 8 | 1-32, 34 |
| Y | WO 95/32986 A (HYBRIDON INC ; AGRAWAL SUDHIR (US); MESCHWITZ SUSAN (US)) 7 December 1995 (1995-12-07) page 9, line 11 ----- -/-- | 1-32, 34 |

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

1 February 2005

Date of mailing of the international search report

10. 06. 2005

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2004/020516

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| Y | <p>ELBASHIR S M ET AL: "Functional anatomy of siRNAs for mediating efficient RNAi in <i>Drosophila melanogaster</i> embryo lysate" EMBO JOURNAL, OXFORD UNIVERSITY PRESS, SURREY, GB, vol. 20, no. 23, 3 December 2001 (2001-12-03), pages 6877-6888, XP002225998 ISSN: 0261-4189 cited in the application page 6881, right-hand column, paragraph 2 - page 6882, left-hand column, paragraph 1 page 6884, left-hand column, paragraphs 3,4 page 6885, left-hand column, paragraph 4 - right-hand column, paragraph 1</p> | 1-32,34 |
| Y | <p>PARRISH S ET AL: "Functional anatomy of a dsRNA trigger: Differential requirement for the two trigger strands in RNA interference" MOLECULAR CELL, CELL PRESS, CAMBRIDGE, MA, US, vol. 6, no. 5, November 2000 (2000-11), pages 1077-1087, XP002226298 ISSN: 1097-2765 cited in the application figures 5,6</p> | 1-32,34 |
| Y | <p>WO 00/44895 A (KREUTZER ROLAND ; LIMMER STEPHAN (DE)) 3 August 2000 (2000-08-03) cited in the application page 6, line 30 - page 7, line 7 page 18, lines 13-29 claims 27,28,64,65,100,101</p> | 1-32,34 |
| P,X | <p>NOVIELLO C ET AL: "Autosomal recessive hypercholesterolemia protein interacts with and regulates the cell surface level of Alzheimer's amyloid Beta precursor protein" JOURNAL OF BIOLOGICAL CHEMISTRY, AMERICAN SOCIETY OF BIOLOGICAL CHEMISTS, BALTIMORE, MD, US, vol. 278, no. 34, 22 August 2003 (2003-08-22), pages 31843-34847, XP002972646 ISSN: 0021-9258 page 31844, right-hand column, paragraph 2 page 31846, left-hand column, paragraph 2; figure 5</p> | 1-32,34 |

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| P,X | <p>MILLER VICTOR M ET AL: "Targeting Alzheimer's disease genes with RNA interference: An efficient strategy for silencing mutant alleles." NUCLEIC ACIDS RESEARCH, vol. 32, no. 2, 2004, pages 661-668, XP002315762 ISSN: 0305-1048 abstract table 1 page 664, right-hand column, paragraph 5 - page 665, left-hand column, paragraph 2 -----</p> | 1-32,34 |

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2004/020516

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1- 32, 34

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-32, 34

A double stranded short interfering nucleic acid (siNA) molecule that directs cleavage of an amyloid precursor protein (APP) RNA via RNA interference (RNAi) as described in claim 1.

2. claims: 33, 35 (part)

A double stranded short interfering nucleic acid (siNA) molecule that directs cleavage of an amyloid precursor protein (APP) RNA via RNA interference (RNAi) as described in claim 1 wherein said siNA comprises any of SEQ ID NOs: 1-33, 200-232.

3. claims: 33, 35 (part)

A double stranded short interfering nucleic acid (siNA) molecule that directs cleavage of an amyloid precursor protein (APP) RNA via RNA interference (RNAi) as described in claim 1 wherein said siNA comprises any of SEQ ID NOs: 34-66, 233-265.

4. claims: 33, 35 (part)

A double stranded short interfering nucleic acid (siNA) molecule that directs cleavage of an amyloid precursor protein (APP) RNA via RNA interference (RNAi) as described in claim 1 wherein said siNA comprises any of SEQ ID NOs: 67-99, 266-298.

5. claims: 33, 35 (part)

A double stranded short interfering nucleic acid (siNA) molecule that directs cleavage of an amyloid precursor protein (APP) RNA via RNA interference (RNAi) as described in claim 1 wherein said siNA comprises any of SEQ ID NOs: 100-132, 299-331.

6. claims: 33, 35 (part)

A double stranded short interfering nucleic acid (siNA) molecule that directs cleavage of an amyloid precursor protein (APP) RNA via RNA interference (RNAi) as described in claim 1 wherein said siNA comprises any of SEQ ID NOs: 133-165, 332-364.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

7. claims: 33, 35 (part)

A double stranded short interfering nucleic acid (siNA) molecule that directs cleavage of an amyloid precursor protein (APP) RNA via RNA interference (RNAi) as described in claim 1 wherein said siNA comprises any of SEQ ID NOs: 166-199, 365-398.

8. claims: 33, 35 (part)

A double stranded short interfering nucleic acid (siNA) molecule that directs cleavage of an amyloid precursor protein (APP) RNA via RNA interference (RNAi) as described in claim 1 wherein said siNA comprises any of SEQ ID NOs: 1463-1470, 1495-1590.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PC JS2004/020516

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
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